

Sharing...the Journey

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Former U.S. President, Bill Clinton's 2007 book on "Giving: How each of us can change the world," provides a simple yet powerful message of hope, optimism, and change. Throughout the book, Clinton effectively captures a giving spirit through dozens of interesting, short stories. As an example, people like John Wood are quitting their jobs at Microsoft in order to build thousands of libraries as well as computer and language labs, while making available educational scholarships to children in such places as Nepal, Laos, India, Cambodia, and Vietnam in a program called Room to Read. To make this program work, there are thousands of other givers who donate books, software, money, and other resources for Room to Read libraries and educational programming. In addition to Wood, there is Woods, or I should say, Tiger Woods (the legendary golfer), who founded the Woods Center where volunteers offer math, science, and technology mentoring to youth of Southern California. Of course, Clinton also highlights AmeriCorps; an organization he was instrumental in creating back in 1993 when president. As he notes, AmeriCorps teachers travel to places such as South Africa, inner city Los Angeles, and hurricane damaged New Orleans to give their time, talents, and educational services. He also documents global organizations such as Vital Voices which is dedicated to building future women leaders around the world. As an example, Vital Voices provides leadership and business training, conferences on women's rights, legal services, and various other educational supports to nurture the hopes, dreams, and entrepreneurial spirit of women in Afghanistan as well as those in other parts of the world.

Reading pages of the book is certain to turn any reader into a giver. President Clinton's awe-inspiring compilation of riveting stories draws the reader to visions of how giving something, however seemingly small or inconsequential at the time, can make a huge difference. People around the world are contributing to efforts to diminish world pollution, discover cures for prostate cancer and AIDS, bring attention to the need for global peace, and provide support to victims of natural disasters and emergencies such as those devastated by the major tsunami that hit South and Southeast Asia on Sunday December 26, 2004 as well as those caught in Hurricane Katrina just 8 months later. Included in this book are stories about those giving some aspect of their lives for just such types of issues and causes.

Each of us has something to give—time before or after work, physical labor and sweat, innovative ideas and other types of mental effort, money and tangible materials, and unique talents and skills—that can make a positive impact on the inhabitants of this planet. In parallel to acts of giving there typically is some sense of sharing—the sharing of stories, visions, kindness, wealth, sense of duty, resources, etc. Indeed, sharing is a

part of giving as much as giving is a part of sharing. Sharing is actually defined as an act of contributing or giving something. And sharing is what this chapter, and perhaps life, is all about. If giving creates hope for someone, then “sharing” potentially multiplies this process to potentially anyone. In effect, giving, while vital to sustain and enrich human life on this planet, is often uni-directional (i.e., from a giver to a receiver), whereas the fruits of sharing more often extend in myriad directions. Sharing may, in fact, represent a synergistic expression or culmination of giving wherein what is provided or shared is duplicated, reused, and extended to those one did not initially intend or imagine benefiting from the act. In effect, acts of sharing take place in a highly interactive dynamic. As noted, however, there certainly is significant overlap between acts of giving and sharing.

Instead of trying to bring to life all acts of sharing, in this chapter, I focus primarily on sharing in educational settings using technology while briefly recounting aspects of my own personal journey in it during the past couple of decades. In the twentieth century, educators were often referred to as givers—those who give back to society without asking for much in return. Such individuals give their time to educating learners at all hours and on any day of the week. They offer their talents in particular subject matter areas as well as imaginative ideas and activities so that others can be motivated to achieve at a high level. Of course, such giving is a model for each succeeding generation of educators.

In the twenty-first century, however, opportunities for educators to share may actually eclipse those to give. In contrast to giving to a particular student, classroom, or school, sharing denotes an impact that is much more far-reaching, or, at least, potentially so. Now, with the emergence of the Internet, and, coincidentally, online sharing, one can impact anyone anywhere on this planet at any time of the day. In particular, sharing has increased in salience within teaching and learning environments due to unique possibilities afforded by online collaborative technologies. However, sharing was not always synonymous with teaching; especially when educational technology was involved. In fact, technology was a major reason for the teaching and learning silos that have pervaded for decades across educational sectors. Too many people blindly accept the bowling alley curricula of the past. With online technologies and the seemingly sudden emergence of the Web 2.0, we can now truly widen our perspectives through rich global and interdisciplinary collaboration and sharing!

As indicated, until recently, technology has been a key reason for the lack of sharing in education. What was on one person’s computer was solely his and should not be transmitted to others since that would only encourage cheating or lazy thinking. Key examples of this perspective included programmed instruction and computer-assisted instruction (CAI) in the 1960s and 1970s which were byproducts of the behaviorist movement made popular by the famous Harvard psychologist B. F. Skinner and his followers. At the time, technology was primarily used to reinforce learning. With such perspectives came the shaping of people in small steps toward a skill using what many opponents labeled “drill and kill instruction.” Shaping trumped sharing. Individualism

overrode collaboration. Result: sharing was virtually nonexistent in that first wave of educational computing technology.

As programmed instruction and its reinforcement style of learning “finally” faded away, many educators in the 1980s and early 1990s began to use technology to expand or broaden what learners could accomplish in basic skill areas such as math, science, reading, and writing as well as other subject matter areas and even less clearly defined learning pursuits. No longer were they limited to using technology to narrowly focus on discrete facts and dates and pounding them one nail at a time into the brains of awaiting learners. In effect, there was a huge and highly welcomed funeral procession for programmed instruction and CAI.

I witnessed part of this mass burial firsthand when conducting my master’s degree research in a number of schools in Wisconsin during the summer of 1987. We had students using dozens of convergent thinking software packages intended to enhance logical thinking, problem solving, hypothesis testing, classification skills, deductive reasoning, and inferencing as well as a similar set of divergent ones for fostering originality, brainstorming, spatial reasoning, recognizing patterns and relationships, and designing original works in poetry, art, drawings, animations, and music. This was a far cry from the canned drills of most technology deployed in schools at the time. Instead of limiting their educational opportunities to a set of predefined standards or objectives, this wave of software elevated or extended learning beyond what anyone could do alone. Such technology tools worked with and expanded upon human cognitive capabilities to enable highly interesting and novel learning outcomes. While the second wave of educational computing technology was not especially designed for sharing and collaboration, it was a means to extend human mental functioning. Result: technology was a cognitive tool to enhance human thinking and reasoning.

By using the second generation of educational technology to “enhance” learning, instead of hammering it in, educators started focusing on computers as cognitive tools that would augment mental functioning, thereby enabling learners to accomplish tasks that were not previously possible. My dissertation project on critical and creative thinking computer prompts embedded in WordPerfect in 1988 and 1989 was a prime example of augmenting learning with technology tools. Such learning enhancements were also found in supplemental resources such as practice exams, current topic readings, outlining and concept mapping tools for writing papers, rudimentary simulations, and other course study aids packaged (or shrink wrapped) on a floppy disk and latter on CD. Such CDs and disks were often glued or taped to the inside cover of the mighty textbook. Unfortunately, sharing typically was not embedded in such efforts, though one could share the disk. Additionally, most often technology was something that the teacher used to demonstrate, teach, show, and explain, not for students to manipulate, test ideas, and collaborate with others. A focus on manipulating and measuring individual learning remained entrenched across all phases of technology design, implementation, and evaluation.

When the Web emerged as a viable educational tool in the 1990s, educators began to creatively experiment with it. At that time, the focus changed from using technology to enhance learning, to using technology to “extend” what you do. This was a third generation of educational computer technology. As an example, at Indiana University, from 1996 to 2000, we used third generation tools such as Web conferencing to organize cross class collaborations between preservice teachers in Indiana and Finland, the UK, Peru, Korea, South Carolina, and Texas. They discussed case problems seen in schools and suggested solutions to each other based on their course readings. With such projects, class discussions could take place on the Web late at night, long after the course lecture was delivered and even after the instructors and their assistants had gone to bed. Ideas were not only shared internationally, they were saved online for the next class of students to read, reflect upon, and use.

Activities which extended learning environments also took place in K-12 and corporate education. In K-12 classrooms, for instance, projects and initiatives such as Key pals, GLOBE, the Journey North, and Kids as Global Scientists pushed learning well beyond traditional walled classrooms so that children could share their papers or scientific findings with peers in other schools, geographic regions, or countries. They might even have a live videoconference between two or more schools to share their curriculum projects and ideas. Such videoconferencing technology could also be employed for engaging and educationally beneficial cultural activities and outreach programming to youth in rural schools as seen in the International Studies in Schools (ISIS) program in my own university. For those outside Indiana, the Global Nomads Groups also employs videoconferencing to foster global awareness and appreciation of cultural differences and similarities by youth in the United States and around the world.

In corporate training, this third generation of tools enabled learners to work in teams with others in their organization located in different parts of the world using asynchronous discussion forums, Web conferencing, and online chats. Such global worker training activities build corporate efficiencies and expand productivity in ways never previously imagined.

As these brief examples illustrate, it was during the 1990s that educational activities were blossoming in seismic proportions beyond the four walls of the classroom. Result: ideas related to using technology to share began to crystallize. However, sharing was primarily limited to sharing papers across locations, sharing opinions in discussion forums, and sharing ideas on email.

While perhaps impressive, all these activities amounted to nothing more than light touch sharing by today’s Web 2.0 standards where user sharing, contributing, and participation are the norm. Just where such efforts will lead remains somewhat of a mystery since most educators today have simply walked through an initial passageway leading to a rich labyrinth of sharing opportunities. Many remain hesitant to wander further inside the possibilities of the Web 2.0; afraid to upset any colleagues, students, administrators, supervisors, or other stakeholders. As a result, sharing, for the most part, continues to be incidental to the course or learning experience goals and objectives; not the prime

motivator for teaching or training with technology. Many educators operating from this perspective fully admit that sharing educational resources, materials, and ideas has wonderful side-effects (e.g., gaining new colleagues, increased global awareness, automatic course updates, etc.); however, their main focus is on enhancing or extending the learning of those enrolled in their classes, not those in the classes of someone else or those who cannot currently attend a class for whatever reason.

Using technology to enhance and extend teaching and training environments was relatively painless. The next phase of educational technology, which sprouted wings in the late 1990s, and is still evolving, relates to using technology to transform the curriculum. While transforming education with technology has not been as widely adopted as some perceive, an avalanche of change is underway. Now with fourth generation educational computing technology, such as the Web 2.0, educational courses are being entirely rethought and revamped to take advantage of authentic learning and real world audiences for collaboration and interaction. For example, there are online corporate reports for business classes to analyze and discuss, Web-based surveys and polls for research courses to access and perhaps verify, digital movies produced by students and shared in YouTube for cultural anthropology courses, Google maps embedded in architecture or urban studies courses, freely available podcasts of Spanish radio for language courses, and live language lessons in Skype. Students can record, communicate, and debate real problems or cases that one or more of them has encountered instead of debating canned ones from textbook publishers. And, equally remarkable, the answers to those problems might come from someone that they will never physically meet. Result: sharing in this fourth phase of technology integration is much more flavorful and multimedia rich; undoubtedly, it will soon be widely accepted as standard educational practice.

Despite hundreds, if not thousands, of such transformational teaching examples, there are myriad bumps in this road. For instance, during the late 1990s, Murray Goldberg, former computer science professor from the University of British Columbia, built a high profile user community around his extremely popular course management system, WebCT. Though he did not anticipate it, he experienced a fast growing user base for his product through his extensive and insightful grassroots efforts. Allowing instructors to initially use his product for free did not hurt either. During this growth phase, Goldberg started dreaming of what it would be like if instructors using WebCT shared content, course resources, ideas, and even teaching styles or approaches. As president and founder of WebCT, he hoped that instructors using WebCT (and similar course management systems) could browse through the shared online contents and write to each other for permission to use them. And while there were 150,000 courses in WebCT format at the time and 50 emails a day from an active and thoughtful usergroup, only two people were willing to put their courses up on display for others to view; a mere 2 courses out of some 150,000. This certainly was not the exciting sharing culture he and other online learning pioneers had envisioned. What went wrong?

Well, there were two gigantic barriers to sharing online contents—ownership and copyright. Some worried about who actually owned the materials and whether they

would benefit if they shared such contents. Others were nervous that corporate lawyers at publishing houses would see the course resources that they were using without proper copyright clearance and engage in some type of legal action. Still others noted concerns about the piracy of their materials.

As these red flags were raised, Goldberg and many others hit a wall on sharing. They grasped the new possibilities for online communities of instructors but lacked the process for this to actually happen. Instructors wanted to share, but they simply could not due to many internal as well as external fears and concerns. Part of the problem was the newness of online learning. Part of the problem was the well known fact that the primary reward system for most instructors in higher education was research-based; it rarely, if ever, revolved around pedagogical inventions or the sharing of such inventions. And still another issue was the emphasis on individualism in most educational settings (i.e., individual teaching, individual learning, individual assessment, etc.), not collaboration. It would take more than a few years of familiarity with online learning environments and sharing content within it to overcome such fears.

As such barriers begin to crumble, numerous signposts of the coming tidal wave of change appear. One key historical marker occurred late in late 2006 when Time Magazine named “You” as the person of the year in recognition of the growing use of online technologies that empower people. As made evident in that issue, people can contribute to learning and comment on the learning of others; instead of passively receiving it. Contributing or giving to others is what both the Web 2.0 and Bill Clinton’s new book are all about. The Web 2.0 is about sharing. We share podcasts both of what we have found online as well as what we have produced. We share ideas in a wiki or contribute to existing wiki pages found in Wikipedia or WikiQuotes. We share our courses and educational resources with others.

We also subscribe to what others want to share with us. We subscribe to particular online news shows, postings from insightful bloggers, channels from YouTube video creators, and a plethora of other online content. What all these events means is that you, the people, control your educational experiences, instead of someone else controlling them for you as in the first few generations of educational technology; especially the initial one. To recap, briefly, then, generations of educational computing technology have marked the evolution of sharing among educators; we have journeyed from using technology to reinforce, enhance, or extend learning, to current visions and initiatives related to how to share that learning. As that occurs, learning environments are transformed.

Thanks to visionary people like Murray Goldberg and the emergence of Web 2.0 technologies, there is now a resounding buzz in education about sharing. During my travels the past few years to China, Spain, Malaysia, Ireland, the UK, Iceland, Singapore, and, of course, the UAE, people have been talking about sharing and the possibilities that it holds for education. This was not the case just a few years prior. For instance, when I gave more than a dozen talks on e-learning in four different cities in Australia in August of 2000 and mentioned sharing, a common refrain I heard was that “sharing may work

over there in the U.S., but it will not work here.” This mantra was repeated when venturing over to Finland nearly a year later as well as the year after that in New Zealand, Korea, and, yet again, Australia. Ironically, in the United States, I heard the same comments only in reverse—it may be viable in those other countries you have been visiting, but not here; not now, not anytime.

Like Murray Goldberg, my optimism on how online sharing and collaboration could change education around the globe had taken a serious blow in the early part of this decade. The dot-sharing bubble was bursting. It really did not matter where I was; each place I stopped at provided the same gloomy news, the same questions, and, generally, the same resistance and reluctance to share. I could have been standing in the middle of an international airport filled with educational professionals from hundreds of countries all headed in different directions and each of them would have stopped and stated the exact same thing—“we do not share in my country, period.” In effect, not only did most educators work alone and apart from others, but they also did not want their educational materials to be exposed to or exploited by a world community that might critique or mismanage them. These trepidations were not minute and restrained, but enormous, pervasive, and intense.

Fortunately, the sharing pioneers kept chipping away at such fears. With each passing year, education and training professionals in K-12 schools, colleges and universities, and corporate, non-profit, military, and government training settings have all become more comfortable with sharing educational ideas, contents, and best practices. Time, experience in teaching with online resources, modeling and examples of others, and general Web familiarity have broadened the views of the once hesitant or reluctant. Sharing has become a prominent part of the educational lexicon. It is part of what one does when you teach, design instructional materials, or evaluate instructional innovations. You share resources and materials in online portals and content repositories, you place your best practices up on display in the Web for others to learn from, and you share your results. Learners and potential learners from every corner of this planet benefit from the sharing.

Sharing now permeates society. One’s casual sharing can have an impact on a child or adult in rural parts of Cambodia, Chile, Chad, or Canada. Let’s briefly look at Canada, as an example. In northern portions of Canadian provinces there typically are no roads, except during cold winter seasons when ice bridges can be formed. In response, education is often shared electronically. In parts of Northern Ontario, thousands of First Nation individuals lack paved roads, plumbing, and other amenities that many of us take for granted. Amazingly, however, they all have broadband access to educational opportunities through programs such as Contact North and the Good Learning Anywhere Project. And, as noted below, with this access at their fingertips, these learners in Northern Ontario, as well as learners in any other corner of the globe, can engage with and share course materials from MIT and numerous other universities for free! Why? Because they have been shared!

While examples of educational sharing might not be as commonly in the news as the giving examples that Clinton documents, they are no less rampant. Many universities and educational organizations are sharing online course materials and information resources, including MIT's OpenCourseWare (OCW) initiative—a plan to place every single MIT course on the Internet for free. Ironically, the initial idea for OCW was generated by MIT engineering professor, Dick Yue, when running on his treadmill. Of course, when Charles Vest, then president of MIT, announced this bold initiative on April 4, 2001, many wondered MIT's actual intentions as well as the ramifications for institutions of higher learning. Back on September 13, 2003, I found out. It was then that I was listening to Professor Atta-ur-Rahman, the Chairman of the Higher Education Commission of Pakistan and Adviser to the Prime Minister on Science and Technology in that country speak at Abu Dhabi Men's College during the e-Merging e-Learning Conference. Professor Atta-ur-Rahman noted that the OCW project from MIT was changing the outlook of youth in Pakistan. As he pointed out, such young people could now learn engineering, science, and mathematical content from some of the foremost minds in the world.

I remember sitting near the back row of this particular symposium session of the conference in a futile attempt to shut my eyes for just a few minutes since I was experiencing significant jet lag, but that proved to be quite impossible. The reason I could not nap for even a few seconds was that Professor Atta-ur-Rahman's talk was far too insightful and mesmerizing. Unlike many presentations intended to push traditional thinking, he had fresh and highly captivating statistics about the technology infrastructure and unique educational opportunities within his country to back up his observations and predictions. As he stated, those with Web access in Pakistan, or anywhere else for that matter, now had a passport to MIT contents including videos, audio files, PowerPoint slides, tests, and lecture notes. In just three years, there already were hundreds of courses online and thousands of hours of free content. What innovations might be spurred in Pakistan and other parts of the world from such free access and sharing for the greater good of humanity? Given more than one million visitors to such contents each month, the MIT OCW project is certainly making a monumental impact. Testimonials found on the OCW homepage are from individuals in dozens of countries including Croatia, Argentina, Nigeria, Morocco, Indonesia, the United States, and China. One educator in the UAE, in fact, noted that, "It gives one the chance to look at other people's materials and compare what they are doing with one's own work. I have used some of the HRM case study materials and acknowledged MIT as the source. **This is an excellent resource and it gives teachers in 'remote' areas a window on the world.** This is real open learning in practice.— Robert, United Arab Emirates."

So momentous is this initiative that OCW courses from MIT have been translated into Spanish, Portuguese, Tai, French, German, Vietnamese, and Ukrainian. With such efforts, a large percentage of the world population can now learn from one person's initial idea to share. Other esteemed universities such as Johns Hopkins, Tufts, Notre Dame, Utah State, Carnegie Mellon, Korea University, the Open University in the UK, and a consortium of universities in Japan including the University of Tokyo have followed the lead of MIT in placing some of their courses online for free. As such

courses are shared, the world, naturally, nudges forward as a better and more enlightened place to put up your tent, open up your laptop, and live and learn. While some are quick to note that typically there is no instructor grading student work within OCW courses, extensive learning is possible without instructors. Self-paced, exploratory, and personally-directed learning is certainly legitimate and vital learning; and often much more exciting, pleasurable, and beneficial than teacher-directed learning.

Not only are course materials being shared, but so are podcasts or online audio files of lectures, conference keynotes, student presentations, and other valuable educational resources. They are sharing ideas in their online blog posts. In effect, anyone living in the twenty-first century with Internet access can be a journalist. Current discoveries and new theories no longer have to wait years in the professional publishing pipelines to be read, discussed, commented on, and revised. The sharing of thoughts, initial research, collaborative ideas, and announcements within one's blog or personal homepage, helps both the sharer and the receiver. For instance, the results from the simple sharing of a blog post might evolve into a magazine or journal article, or even a book. And with free and open access journals, open source books, and even wikibooks, sharing is amplified from a simple blog post to a series of ideas with collaborative partners around the world. In fact, many scholars are putting up full books on the Web for anyone to download the entire contents or pieces of it as needed. Such online sharing and collaboration is becoming so common that many college students today are working collaboratively to write their own textbooks using Web resource tools and systems, instead of buying them from the previously all-powerful publishing houses. Anyone can share an idea with anyone else at any time it comes up. Sharing is the new norm in education.

Not only have I seen such sharing in action, I have personally attempted to develop a series of sharing tools and resources. My initial footsteps into this area coincided with the dotcom bubble. During late 1998 and on into 1999, about a dozen doctoral students and I developed more than a dozen sharing tools and associated resources for an undergraduate textbook in educational psychology with Houghton Mifflin Company. The goal was for students and instructors who used the book to share instructional activities, events, and ideas online. They could also find advice, examples, and templates for their teaching. The resulting textbook sharing site and portal was called "INSITE."

When done with INSITE, we expanded on these ideas with a free global resource for college instructors and corporate trainers called "InstructorShare" that was developed through CourseShare; a company we formed to help share educational resources with the world for free. The goal of InstructorShare was sharing beyond one textbook to any educational resource for the world education community. With InstructorShare, instructors in higher education and trainers in corporate settings could share media elements, book reviews, pedagogical innovations, and conference information within more than 200 communities of distinct fields or disciplines. Importantly, they also could asynchronously or synchronously discuss their use.

While InstructorShare was quickly used by thousands of people, copyright issues and concerns made us take it offline after a few years. Nevertheless, it remains a model for

online sharing. Nearly a decade later, dozens of other online repositories (i.e., databases of content or learning objects) and referatories (i.e., databases of links) existed, including popular sites such as MERLOT (USA), Connexions (USA), CAREO (Canada), and Jorum (the UK). Such instructor sharing communities symbolize educational opportunities and hope that Clinton referred to in his book on giving.

And while we decided to terminate the InstructorShare project, we did not give up on sharing. In fact, during the greater part of the next five years, my team also built a series of sharing portals including UniversityShare, TrainingShare, LibraryShare, PublicationShare, and BookstoreShare. LibraryShare, for instance, indexes digital libraries and online library resources as well as hundreds of public and university libraries in North America. The development of these various “share” sites was intended as a pathway to human knowledge. In effect, it was our chance to share. The only commercial product we developed, SurveyShare, became the most widely used result of our efforts with tens of thousands of people each year developing online surveys with it and hundreds of thousands taking them; the vast majority of which use it for free. Importantly, users of SurveyShare collaboratively build and share their surveys and survey results with their colleagues and friends.

As pilgrims in this online sharing journey, we were intent on finding ways to share the knowledge of the world by assembling a compendium of links to all the online libraries, bookstores, and universities we could locate. While lofty goals, many organizations and institutions are now building online libraries and content aggregating sites that do just that and much more. Personnel from Google, for example, are digitizing millions of books as are people at the Internet Archive, Yahoo!, Microsoft, and others. Such accessible e-books, or at least pieces of them, are now shared with a fast growing online world community. And not just books. The Internet Archive is attempting to index the entire Web. In the “Wayback Machine,” for example, one can look up Internet Web pages by year, month, and date. By the middle of 2007, the Internet Archive had indexed some 85 billion Web pages as well as nearly 80,000 online moving images, more than 40,000 live music concerts, over 162,000 audio files, 40,000 free software tools, and a plethora of open educational resources. As these colossal scanning and indexing projects unfold, sharing is no longer debated and resisted; instead it is a key part of what it means to be in education, no matter what setting one is in.

With such momentum, the conversations surrounding sharing have vastly changed. When I travel to different countries and cities today, the reactions are much different than they were in 1999 or 2000, or even just one or two years ago. I witness new possibilities for sharing with each journey I make. When in Taipei in July of 2005, I met with Lucifer Chu who has donated hundreds of thousands of dollars of his own money to translate MIT courses to traditional and simplified Chinese in a project called the Opensource Opencourseware Prototype System (OOPS). Lucifer is a highly energetic, funny, and charismatic leader who is changing the world through translation efforts and ensuing sharing.

Fortunately, Lucifer's OOPS project is hardly a one act play. Sharing is about connections and one phenomenal resource for making them is, in fact, called "Connexions." A visit to Rice University in Houston, Texas in November 2006--where the Connexions project is headquartered--confirmed that they had developed one of the fastest-growing and most widely used collections of online scholarly material in the world. As of June 2007, Connexions contained more than 4,000 course modules available for download in such areas as physics, history, music, computer science, nanotechnology, and biodiversity resulting in millions of page hits each month. With the innovative ideas of Professor Richard Baraniuk, the Connexions people were not only housing an extremely large repository of educational materials, they were building a powerful set of free software tools and resources to expand these sharing and collaboration efforts.

A similar and somewhat more established site, MERLOT, which evolved out of the California State University Center for Distributed Learning a decade earlier, currently has more than 17,000 content resources and 40,000 members around the world using shared online resources as well as evaluating them in a peer review rating system. For younger learners, there is Curriki, spearheaded by Scott McNealy, former president of Sun Microsystems. Curriki has a mission to place free and open source K-12 curricula and instructional materials on the Internet that can be universally used by children and educators. Similarly, the Global Text Project is developing a portal of more than 1,000 free open source digital textbooks to help educate disadvantaged populations and those in third world countries. Using such resources, instructors around the world can enhance their courses with freely shared educational resources and pass them on to colleagues. It is interesting the degree to which perspectives have changed since the first generation of educational computing technology just a few short decades ago! Fortunately, people are not longing for the good old days of CAI.

And the journey continues. Five short months after my November trip to Rice University, I was back on that campus in late March 2007 to attend a Hewlett Foundation grantees meeting. It was a gathering in Houston among those with funding from the foundation to share experiences about the open educational resources (OER) that they were developing, promoting, and evaluating. In effect, this was a meeting of sharers about sharing. As I panned the room from the top row, I could see Lucifer Chu from OOPS, Richard Baraniuk from Connexions, Candice Thille from Carnegie Mellon, Tom Carey from MERLOT, Bobbi Kurshan from Curriki, the world famous John Seely Brown, and David Wiley from Utah State who developed the online platform for OCW courses called EduCommons. Each played a key role in the emergence and proliferation of the OER movement. In addition, there were also two board members from the Wikimedia Foundation--representing potentially the largest educational sharing site in the world. And there were people from MIT's XO laptop initiative--also referred to as the One Laptop Per Child project--that is impacting youth in Africa, Asia, and South America. Local and global sharing of education will explode as inexpensive laptops are built and placed in the hands of waiting learners in third world countries.

Sitting in the midst of so many OER people in one space was truly exhilarating and inspiring since the OER movement is undoubtedly the most interesting and earth changing educational event to occur in my twenty years in higher education. It may be the pinnacle outcome of the Internet. Without much doubt, OER has far reaching consequences. Simply stated, as education is shared and, in turn, transforms the lives of millions of youth, so, too, are economies, international relations, and personal self-esteem and the potential for educational achievements and competencies.

It does not matter where I travel to or with whom I communicate now, the stories I hear are much different as the seeds of sharing have ripened into assorted educational fruits. No longer are there mass protest rallies against online learning or the sharing of such resources and learning. Visits to various cities in Taiwan, Thailand, The UK, Saudi Arabia, and Canada at the end of 2006 and the first half of 2007 confirmed this for me. At each stop, people asked me if it was acceptable to videostream my talks. In response, I quickly told them to podcast it, videostream it, Webcast it, or do whatever they want. And feel free to post my slides as well! All education should be shared. The more we share educational resources, the more the knowledge of this planet is opened to learners within it.

So what can you share to help education around the world?

1. Mentoring: You can sign up to be an online mentor in your area of expertise. Many professional organizations today include some type of mentoring services including engineering, teaching, business, and nursing.
2. Course Content: If in post-secondary education, you can share instructional content you have created in places such as MERLOT.org or Connexions. If in K-12 education, perhaps contribute to or use Curriki or one of many online lesson plan sharing sites.
3. Join the OCW Movement: At an organizational or institutional level, you can share entire courses or programs as in the OCW movement.
4. Guest Expert: You can be a guest expert in an online chat or Webinar. You might also podcast a lecture on a topic and place it on the Web for others to access for free such as in iTunes. Along these same lines, you might videostream a lecture you give in a class, at a conference, or in a workshop for free distribution to the world community.
5. Collaboration: You can sign up at ePals or KeyPals to engage in online collaboration with another school.
6. Translator: You might volunteer to translate open educational resources in your native tongue.
7. Portals: You can create educational portals of online content.
8. Evaluator: You can help in the evaluation or rating of online content.
9. Software Developer: Software developers can offer open source or introductory free versions of their software or special discounts for education.
10. Blogger: You can blog on current events in education, thereby sharing what is happening.

The list above is only a fraction of what is now possible. Clearly, opportunities for sharing our educational lives are exploding. This is a key part of the giving that Clinton was talking about. To share education is among the foremost acts of giving that one can

engage in as a human being. And such educational sharing takes place in myriad formats.

Sharing can be casual among friends who teach the same course and want each to benefit from what each other has developed or accomplished. Such collegial sharing might involve a new instructional activity to test out or a video one has just found in YouTube, CNN Video, or the BBC News and Videos. Each instance of sharing among these friends and colleagues, casual as it might be, allows for innovations, changes, and new ideas to be piloted and perhaps someday flourish in other disciplines not originally intended. Sure instructors have always shared their resources with friends, but not at the speed or intensity possible today. While some share educational ideas using email, text messaging, and comments to online discussion forums or communities, many others now prefer their sharing to be conducted in social networking sites like MySpace, LinkedIn, Digg, and Facebook. Still others employ free online phone services such as Skype and Google Talk.

Such sharing is often creative, spontaneous, and somewhat haphazard. As such, it is virtually untrackable. But, as the millions of visits to these sites each day makes evident, it is happening! Sharing can also be more formally designed and documented in popular news media as in the OCW sites or in the translations of them to additional languages as in the OOPS project. What institutional leaders and politicians need to figure out is how to foster and encourage such formal as well as informal sharing pursuits. How can they perhaps nudge them along, embed recognition for them, and celebrate their successes?

The scope of online sharing certainly varies. It can occur among just a few individuals or perhaps benefit just a single person for it to have value. At the same time, it can be used by teams, schools, local communities, countries, regions, or the world community. Sharing can be sensed in a fleeting moment in time and dissipate. It can also be much more lasting and even viral, thereby impacting people far beyond the originally intended audience and recurring a million times over.

The fourth generation of educational technologies has not only made sharing possible, but highly encouraged, and, for some, indispensable; it is how countless individuals today spend their lives. Consequently, stories of sharing in education will be part of teaching and learning lore for decades to come. Teachers will continue to be givers, but everyone education or training, no matter the role or capacity, will be sharers and sharing receivers. There are no shortages of sharing opportunities today, nor will there be ten, twenty, or one-hundred years from now. With each passing generation, sharing will become increasingly synonymous with education, since, sharing, like giving, is at the forefront of what it means to be human. Each person walking this planet will be expected to share his or her ideas, talents, expertise, wisdom, products, computing power, bandwidth, scientific discoveries, and educational materials with others using various forms of online technologies. As with Clinton's documentation of how giving can change the world, anyone can make a small dent in solving educational problems and pushing progressive educational reforms through sharing. What will your sharing be and where might your journeys in this exciting arena lead? Please share the results.